Errata Page

In the thesis *Even Harmonious Labelings of Disconnected Graphs* by Danielle Stewart, there is an erroneous theorem on page 13, Theorem 1. The Theorem is stated as follows:

Theorem 1 *The graph nP_m is properly even harmonious if and only if n is even and $m \geq 2$.*

The correct version of the theorem and proof is as follows:

Theorem 1 *The graph nP_m is properly even harmonious if n is even and $m \geq 2$.*

Proof. The modulus is $2(mn - n)$.

Drawing the graph as shown in Figure 17, label the vertices starting with the top left corner to the bottom left corner with $1, 2, \ldots, n$ then label the second vertex of the first path $n+1$, continuing to label the second vertices of all n paths consecutively with $n + 2, n + 3, \ldots, 2n$. The third vertex of the first path will be labeled $2n + 1$, and all paths labeled consecutively with $2n + 2, 2n + 3, ...3n$. The m^{th} vertices of the n paths are labeled with $mn - n + 1, mn - n + 2, \ldots, mn$.
Reading the edge labels vertically from top to bottom and left to right, we see that they begin with $n+2$. Increasing by 2 each time, they end with $(2mn-n) \bmod (2mn-2n) = n$. So there is no overlap of edge labels.

To see that there is no duplicated vertex labels, notice that the vertex labels are $1, 2, \ldots, m$ and $mn \leq 2mn - 2n$, which simplifies to $0 \leq mn - 2n$. This is clearly true since $m \geq 2$. ■